

the present application is directed to, is a layer of undamaged monocrystalline semiconductor material. The formation of a device with undamaged monocrystalline semiconductor material is shown in Figures 2A-2F and Figure 3. In particular, layer 26 of Figures 2C-2D and second layer 16 of Figures 2E-2F and Figure 3. As illustrated, Layer 26 (16) remains undamaged because dopants (ions) are not implanted through it. As illustrated in the figures of the application, this is achieved by forming the gettering zone by implanting ions through the amorphous semiconductor layer 25 Figure 2B and 2C, which is layer 28 of Figure 2D and the first layer of Figures 2E-2F and Figure 3. The wafer is then inverted so that the first later (which had the ions implanted through it) is positioned approximate the handle wafer 11 and the second undamaged layer 16 is positioned away from the handle wafer 11. This allows an epitaxial monocrystalline semiconductor layer 18 to be deposited on a surface of the second undamaged layer 16, see page 7 lines 3-9 of the present application. The Henley reference does not teach or disclose a semiconductor device that has a layer of undamaged monocrystalline semiconductor material as it is disclosed and claimed in the present application. See Figures 1A-1D, 4A-4E, 6A-6E of the Henley reference.

In particular:

Claim 24

Independent Claim 24 includes the elements a "second layer of undamaged monocrystalline semiconductor material ... forming a semiconductor device on said second layer of undamaged monocrystalline semiconductor material or on a layer of epitaxial monocrystalline semiconductor material deposited on said second layer ..." the Henley reference does not teach or disclose "second layer of undamaged monocrystalline semiconductor material ... forming a semiconductor device on said second layer of undamaged monocrystalline semiconductor material or on a layer of epitaxial monocrystalline semiconductor material deposited on said second layer ..."

Claim 26

Independent Claim 26 includes the elements "a second layer of undamaged monocrystalline semiconductor material ... said gettering zone being deposited substantially at said depth between the first layer of monocrystalline semiconductor material and the second layer of undamaged monocrystalline semiconductor material ... bonding said insulating bond layer to said surface of said wafer adjacent the first layer of monocrystalline semiconductor material." The Henley reference does not disclose or teach "a second layer of undamaged monocrystalline semiconductor material ... said gettering zone being deposited substantially at said depth between the first layer of monocrystalline semiconductor material and the second layer of undamaged monocrystalline semiconductor material ... bonding said insulating bond layer to said surface of said wafer adjacent the first layer of monocrystalline semiconductor material."

#### Claim 28

Independent Claim 28 includes the elements "... a first layer of the monocrystalline semiconductor material adjacent said first surface and a second layer of undamaged monocrystalline semiconductor material adjacent to said second surface, and interposed between said first and second layers of the monocrystalline semiconductor material, a substantially planar intrinsic gettering zone ... an insulating layer deposited on said first surface ... a handle wafer bonded to said insulating bond layer." The Henley reference does not teach or disclose "... a first layer of the monocrystalline semiconductor material adjacent said first surface and a second layer of undamaged monocrystalline semiconductor material adjacent to said second surface, and interposed between said first and second layers of the monocrystalline semiconductor material, a substantially planar intrinsic gettering zone ... an insulating layer deposited on said first surface ... a handle wafer bonded to said insulating bond layer."

#### Claim 38

Independent Claim 38 includes the elements "the wafer having a first layer of monocrystalline semiconductor material adjacent a first surface of the wafer, the wafer further

having a second layer of undamaged monocrystalline semiconductor material adjacent a second surface of the wafer ... a substantially planar intrinsic gettering zone ... formed by implanting ions of the semiconductor material through the first layer of monocrystalline semiconductor material ... an insulating bond layer bonding the handle wafer to the first surface of the wafer.” The Henley reference does not disclose or teach a “wafer having a first layer of monocrystalline semiconductor material adjacent a first surface of the wafer, the wafer further having a second layer of undamaged monocrystalline semiconductor material adjacent a second surface of the wafer ... a substantially planar intrinsic gettering zone ... formed by implanting ions of the semiconductor material through the first layer of monocrystalline semiconductor material ... an insulating bond layer bonding the handle wafer to the first surface of the wafer.”

Accordingly, the independent claims are patentably distinct from the Henley reference. Therefore, Applicant respectfully requests the withdrawal of the rejections of claims 24, 26, 28 and 38 under 35 U.S.C § 120(e). Moreover, since the remaining pending claims depend from their associated patentably distinct independent claims their rejection under 35 U.S.C § 120(e) should also be withdrawn.

In regards to the rejection of dependant Claims 30, 32-34, 39 and 42-44 Under 35 USC § 103, the Examiner recited the same rejections as he made in the First Office Action mailed May 20, 2002 without providing an explanation why the Applicant's amendments and arguments failed to patentably distinguish the present application. The only statement made by the Examiner was that the Applicant's arguments have been considered moot in view of the new grounds of rejection. However, the Examiner provided no new grounds of rejection with regard to the claims rejected under section 103. Accordingly, Applicant respectfully maintains the arguments set out in the Amendment and Response filed on August 20, 2002 patentably distinguish the dependant claims 30, 32-34, 39 and 42 from the art cited.

AMENDMENT AND RESPONSE

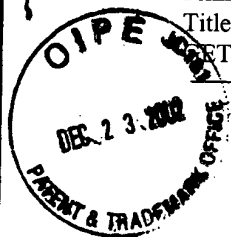
Serial No.: 09/846,795

Filing Date: May 1, 2001

Title: BONDED SUBSTRATE FOR AN INTEGRATED CIRCUIT CONTAINING A PLANAR INTRINSIC  
BETTERING ZONE

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Attorney Docket No. 125.013US02



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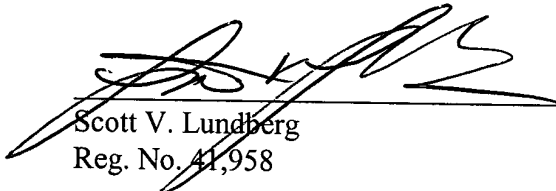
CONCLUSION

Applicant respectfully submits that the claims 24-44 and 46-48 are in condition for allowance and notification to that effect is earnestly requested in an Advisory Action. If the Examiner has any questions or concerns regarding this application, please contact the undersigned at (612) 332-4720, ext. 227.

Please charge any additional fees or credit any overpayments to Deposit Account No. 502432.

Respectfully submitted,

Date: 12-16-02

  
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